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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/318,460

05/25/1999

MARK O. VOGEL

99.089

1443

20306

7590

12/15/2004

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP

300 S. WACKER DRIVE

32ND FLOOR

CHICAGO, IL 60606

EXAMINER

JAGANNATHAN, MELANIE

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/318,460

Applicant(s) **AK**

VOGEL, MARK O.

Examiner

Melanie Jagannathan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,12-17,23,24 and 26-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7,12-17 and 28-45 is/are allowed.
- 6) ☒ Claim(s) 23,24,26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed limitation of error correction levels are selected from the group consisting of Forward Error Correction level or Forward Error Correction data coverage size is not disclosed in specification so that one of ordinary skill in the art could implement step without undue experimentation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23-24,26,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartzman et al. US 6,385,773 in view of Chen et al. US 5,943,604.

Regarding claims 23-24, 26, the claimed scheduling of a plurality of quiescent periods on the upstream channel wherein no data is transmitted and measuring a noise floor value during one of these periods and converting measured noise floor value to signal-to-noise ratio is disclosed by Schwartzman et al. where spectrum analyzer determines intrinsic noise level of frequency channel being used by accumulating data during periods when cable modem does not transmit a data packet at all, the CMTS has reserved a timing mark for specific cable modem that sends no data. Spectrum analyzer can measure noise floor of frequency channel without receiving data packet and changes present frequency channel to channel with power measurement for transmission. See Figure 4 and column 11, lines 21-67, column 12, lines 1-8. Schwartzman does not disclose the claimed selecting parameters, at least one of a symbol rate, modulation type, or error correction levels, for data transmission on upstream channel from a table, wherein the selection is based on signal-to-noise ratio and target packet error ratio, building UCD message based on parameters and sending message is disclosed by Chen et al. discloses check of noise level in cable system and if there is too much noise then it is determined the signal-to-noise ratio is below an acceptable amount which is a desired or target error amount. See columns 4-5, column 9, lines 25-42, column 10, lines 21-67 and column 11. Packet checker saves error statistics in an array or database for frequency being analyzed and after all frequencies have been checked the error statistics are checked and a determination is made as to which frequency has the best or highest signal-to-noise ratio. This frequency band slice would have the least amount of noise and is used for transmission and the upstream frequency selected is involved in the modulation techniques 16 QAM or QPSK used in Chen et al. See column 5, lines 60-67, column 6, lines 1-6, column 10, lines 21-67, column 11, lines 1-51. At the time the

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invention was made it would have been obvious to modify noise floor measurement of Schwartzman with storing in table of noise level measurements at different frequencies of Chen et al. One of ordinary skill in the art would be motivated to do so to lessen upstream channel noise that results in lower data throughput and interrupted service, adversely affecting performance and efficiency. See column 4, lines 55-60.

Regarding claim 27, on page 18 of specification of present invention, it is stated it is well known in the art FEC bits are used detect, locate and correct transmission errors. At the time the invention was made it would have been obvious to modify Schwartzman et al. and Chen et al. to include the use of FEC. One of ordinary skill in the art would be motivated to do so for efficient error correcting.

Allowable Subject Matter

5. Claims 1-7, 12-17, and 28-45 are allowed. The following is a statement of reasons for the indication of allowable subject matter: recognizing substantial variance in signal to noise ratio, ascertaining whether variance is consistent over a given number of transmission cycles and determining new parameters associated with variance and negotiating the use of new parameters in upstream channel, measuring a payload size for a selection of data transmissions on upstream channel, recognizing substantial variance in payload size and ascertaining whether variance is consistent over a given number of transmission cycles and determining new parameters associated with variance and negotiating the use of new parameters in upstream channel, recognizing a substantial variance in measured packet error ratio without a corresponding change in signal-to-noise ratio or payload size for a selection of data transmissions, adjusting a Forward Error Correction level of data transmission to compensate for variance.

Response to Arguments

6. Applicant's arguments with respect to claims 23-24,26,27 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues Chen et al. does not disclose selecting parameters for data transmission based on target packet error ratio. Examiner contends Chen et al. discloses calculating signal-to-error-noise ratio and comparing to an acceptable level (target level) for frequencies and saving these error statistics in an array or database for frequency being analyzed and after all frequencies have been checked the error statistics are checked and a determination is made as to which frequency has the best or highest signal-to-noise ratio. This frequency band slice would have the least amount of noise and is used for transmission. See column 10, lines 21-67, column 11, lines 1-51. Applicant argues Chen et al. does not disclose amended limitation of parameters being at least one of symbol rate, modulation type or error correction level. Examiner contends the selection of frequency with highest signal to noise ratio is involved in the modulation for upstream transmission so it teaches the claimed limitation of parameter being at least one of symbol rate, modulation type or error correction level.

Applicant argues Chen et al. does not disclose the claimed scheduling of a plurality of quiescent periods on the upstream channel wherein no data is transmitted and measuring a noise floor value during one of these periods. Examiner submits new grounds of rejection with reference Schwartzman et al.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

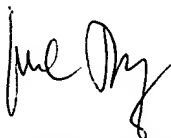
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3163.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


FRANK DUONG
PRIMARY EXAMINER

Melanie Jagannathan
Patent Examiner
AU 2666

MJ